

XLIX.—*Observations on the Genus Sphenia, with Descriptions of new Species.* By EDGAR A. SMITH.

[Plate XV. A.]

THE genus *Sphenia* was originally founded by Turton* in 1822 for the well-known *S. Binghami*. It was founded on conchological grounds only, and it was not until 1853 † that an account of the soft parts was published. The genus has relationship, either as regards the shell or the animal, with *Mya* and *Corbula*; indeed it is considered synonymous with the former by Jeffreys ‡. On the other hand, M. Petit § upholds its validity, observing that it differs from *Mya* by its thin shell, which is less gaping behind and very inequivalve. The animal has relatively short siphons, and, at the base of the foot, a true byssus. The *Sphenias* live attached in holes in rocks, whilst the *Myæ* rest buried in the sands.

Mr. Clark ¶, although admitting the genus, appears to have found very slender reasons for so doing. He observes:—“This animal has great affinity to *Saxicava*, besides alliances with *Corbula* and *Mya*; indeed, the genus *Sphenia* is almost unnecessary, and its animal is nearly identical with *Saxicava arctica*, and the structure of the hinge and the other hard parts have much the same generalities.”

Sphenia is admitted as a distinct genus by Forbes and Hanley, Tryon, Fischer, H. and A. Adams, and others. It is united with *Mya* by Jeffreys, and considered as a subgenus of *Corbula* by Philippi and Woodward.

After careful consideration I am inclined to agree to the separation of this genus. Besides the differences between it and *Mya* pointed out by M. Petit it is worth noting that all the species at present known are very small in comparison with the *Myæ*.

M. Petit refers to the presence of a byssus as a distinguishing character; but I would point out that *Mya* in the young stage also secretes that appendage ¶¶.

Corbula does not form a byssus, and, judging from the *C. gibba*, the siphons appear to be shorter than in *Sphenia*; also, like *Mya*, it lives buried in sand or mud, not in holes in rock like *Sphenia*.

* Conch. Ins. Brit. p. 36.

† Forbes and Hanley, Brit. Moll. i. pp. 189–193.

‡ Brit. Conch. iii. pp. 60 and 70.

§ Cat. moll. test. Europ. 1869, p. 245.

¶ Brit. Marine Test. Moll. (1855), p. 150.

¶¶ Jeffreys, Brit. Conch. vol. iii. p. 66.

Seventeen recent species have been described as belonging to this genus, as follows:—

1. *Sphenia Binghami*, Turton. 1822.
2. — *Swainsoni*, Turton. 1822.
3. — *decussata* (Mont.), Turton. 1822.
4. — *californica*, Conrad. 1837.
5. — *Cleryana*, d'Orbigny. 1846.
6. — *ornatissima*, d'Orbigny. 1846.
7. — *alternata*, d'Orbigny. 1846.
8. — *Rüppellii*, A. Adams. 1850.
9. — *princeps*, A. Adams. 1850.
10. — *elliptica*, A. Adams. 1850.
11. — *decurtata*, A. Adams. 1850.
12. — *philippinarum*, A. Adams. 1850.
13. — *fragilis*, Carpenter. 1857.
14. — *bitirata*, Gabb. 1861.
15. — *ovoidea*, Carpenter. 1865.
16. — *perversa*, Blanford. 1867.
17. — *pacifica*, Folin. 1867.

Of the above, no. 2 has been shown to be the young of *Mya truncata*, no. 3 equals *Petricola lithophaga*, nos. 5, 6, and 7 are species of *Cuspidaria*, nos. 4, 9, 10, 11, and 12 have since been removed to Conrad's genus *Cryptomya*, and no. 14 appears to be a young *Saxicava*, as suggested by Carpenter*; this, however, is uncertain until the type, if preserved, has been reexamined.

The following species—*decussata*, Deshayes, *semistriata*, Hanley, and *mindorensis*, Adams and Reeve—originally described by their respective authors as *Myæ*, were subsequently referred to *Sphenia* by A. Adams, but have since been definitely located in *Cryptomya*. In the Paetel Catalogue, 1890, iii. pp. 20, 21, *Rupicola distorta*, Montagu (= *concentrica*, Fleur. de Bellev.), is erroneously classed with *Sphenia*. The shells of nearly all the species are very similar and liable to great variation in form, arising from the locality in which they live. The following are the species which belong to *Sphenia* as now understood.

Genus SPHENIA, Turton.

1. *Sphenia Binghami*, Turton. (Pl. XV. A. fig. 1.) B.M.†
Sphenia Binghami, Turton, Conch. Ins. Brit. p. 36; Fischer, Man. Conch. p. 1122, pl. xxxiii. fig. 4.

* Moll. West. North America, 1872, p. 118.

† Species marked B.M. are in the British Museum.

Sphenia Binghami, Forbes and Hanley, Brit. Moll. vol. i. p. 190, pl. T. fig. 3, and pl. ix. figs. 1-3.

Mya Binghami, Jeffreys, Brit. Conch. vol. iii. p. 70, pl. L. fig. 3.

Hab. Great Britain, France, Spain, Piedmont, Algeria, Tunis.

2. *Sphenia Rüppellii*, A. Adams. (Pl. XV. A. figs. 2, 3.) B.M.

Sphenia Rüppellii, A. Adams, Proc. Zool. Soc. 1850, p. 89.

Hab. Red Sea.

This is a true *Sphenia*, and has been wrongly transferred to *Cryptomya* in the Paetel Catalogue, p. 21. It is clothed more or less with a yellowish epidermis, and is peculiar on account of a few radiating lines upon the anterior end of the valves.

3. *Sphenia fragilis*, Carpenter. (Pl. XV. A. figs. 4, 5.) B.M.

Sphenia fragilis, Carp. Mazatlan Cat. p. 24.

Sphenia fragilis, De Folin, Les Méléagrines, p. 15, pl. ii. figs. 7-9.

Hab. Mazatlan, west coast of Mexico.

The types of this species in the British Museum are rather more equilateral than the shell figured by De Folin. *Corbula laticola*, Valenciennes (Voy. Vénus, Zool. Atlas, pl. xxiv. figs. 6, 6a), has never, as far as I can discover, been described. Carpenter suggests that it may be the same as his *S. fragilis*. This may be so, but without examining the type it is impossible to determine definitely. The form and size of the shell, its position in a crypt, and the tooth of the left valve are characteristic of *Sphema*.

4. *Sphenia bilirata*, Gabb.

Sphenia bilirata, Gabb, Proc. Ac. Nat. Sci. Philad. 1861, p. 369.

Hab. Santa Barbara, California.

Perhaps the young stage of *Saxicava*.

5. *Sphenia ovoidea*, Carpenter.

Sphenia ovoidea, Carp. Proc. Ac. Nat. Sci. Philad. 1865, p. 54.

Hab. Puget Sound.

S. ovalis, Carp. (Moll. West. North Amer. p. 168), apparently is a misprint for *ovoidea*.

6. *Sphenia perversa*, Blanford. (Pl. XV. A. fig. 6.) B.M.

Sphenia perversa, Blanford, Journ. Asiat. Soc. Bengal, vol. xxxvi. (ii.) p. 68, pl. xiv. figs. 4-6 (1867).

Hab. Delta of the Irawady, Pegu; in burrows in stone, apparently the holes of *Martesia*.

Mr. Blanford makes a curious mistake with regard to the

hinge. He says, "In every respect, except the position of the lamellar tooth in the hinge of the left valve instead of the right, the shell appears to be a true *Sphenia*." In Mr. Blandford's figure the "lamellar tooth" is properly depicted in the left valve; in specimens of this species in the British Museum it is also in the left, and in every other species and specimen examined by the writer it is in the same valve.

7. *Sphenia pacifica*, De Folin. (Pl. XV. A. fig. 7.)

Sphenia pacificensis, De Folin, Les Méléagrines, p. 15, pl. ii. figs. 10, 11.

Sphenia pacifica, Martens, Zool. Rec. 1867, p. 586.

Hab. Panama, on pearl-oysters.

8. *Sphenia Sowerbyi*, sp. n. (Pl. XV. A. fig. 8.) B.M.

Testa paulo inæquivalvis, postice rostrata, et anguste hians, antice rotundata, elongata, transversa, alba, epidermide tenui præcipue marginem versus induta; valvæ tennes, mediocriter convexæ, concentricè striatæ, carina obliqua ab umbone usque ad extremitatem posticam decurrente instructa; margo dorsianticus obliquus, arcuatus, posticus concavus, ventralis late curvatus; umbones prominentes, fere mediani, ad apicem antrorsum inclinati; valva dextra subdentula, sinistra dente compresso subquadrato marginali pone umbonem instructa; linea pallii infra cicatricem posteriorem oblique descendens, vix sinuata.

Longit. $10\frac{1}{2}$ millim., alt. 6, diam. $4\frac{1}{2}$.

Testa junior minus elongata, haud rostrata.

Longit. 7 millim., alt. 5, diam. $3\frac{1}{2}$.

Hab. Ariancoupan, near Pondicherry.

In the right valve the hinge-margin immediately in front of the umbo is somewhat thickened, but the incrassation is hardly enough to be termed a tooth.

Specimens of this and the following species have been presented to the British Museum by Mr. G. B. Sowerby, after whom I have much pleasure in naming that now described.

9. *Sphenia similis*, sp. n. (Pl. XV. A. fig. 9.) B.M.

Testa *S. Sowerbyi* similis, sed minor, angustior, carina umbonali postica acutiore instructa, magis inæquilateralis, postice in rostro longiore et latiore terminans, margine dorsali postico minus incurvato, ventrali minus arcuato.

Longit. 8 millim., alt. 5, diam. $3\frac{1}{2}$.

Hab. — ?

Although very like the preceding species, I believe that the present form is quite distinct. It is a longer and narrower shell, with a longer, straighter, and broader rostrum, and the

oblique umbonal keel is much more evident and acute. The character of the hinge is the same.

10. *Sphenia inæqualis*, sp. n. (Pl. XV. A. fig. 10.) B.M.

Testa valde inæqualis, subtrigona, æquilateralis, antice rotundata, postice rostrata, concentrice rugose striata, alba, epidermide tenui pallide lutea plus minus induta; valvæ mediocriter crassæ, sinistra fere plana præter umbonem versus, dextra conspicue major, profunda, postice carinata, edentula; dens cardinalis valvæ sinistræ compressus, mediocriter validus; pagina interna alba, incrassata; cicatrix antica elongata, postica ovata.

Longit. 11 millim., alt. 8, diam. $4\frac{1}{2}$.

Hab. Singapore. Coll. Cuming.

This species, judging from the single specimen in the Museum, is remarkable for the great inequality of the valves, the left being almost flat and fitting within the margin of the right, which is considerably convex. In this respect it links *Sphenia* with *Corbula*; and the rostrate form also recalls certain forms of the latter. Near the inner edge of the posterior adductor a short linear oblique scar is observable; it probably indicates the point of adherence of the pedal retractor.

EXPLANATION OF PLATE XV. A.

<i>Fig.</i> 1. <i>Sphenia Binghami</i> .	<i>Fig.</i> 7. <i>Sphenia pacifica</i> . <i>Fig.</i> 8. — <i>Sowerbyi</i> . <i>Fig.</i> 9. — <i>similis</i> . <i>Fig.</i> 10. — <i>inæqualis</i> .
<i>Figs.</i> 2, 3. — <i>Rüppellii</i> .	
<i>Figs.</i> 4, 5. — <i>fragilis</i> .	
<i>Fig.</i> 6. — <i>perversa</i> .	

L.—*Palæichthyological Notes*. By A. SMITH WOODWARD, F.L.S., of the British Museum (Natural History).

[Plate X.]

1. *On some Ichthyolites from the Keuper of Warwickshire.*

Remains of fishes are so rarely met with in the British Trias, and so little is known of the genera of the period, that even fragmentary specimens are worthy of notice. Having had the privilege of examining the largest collection hitherto made, that of the Rev. P. B. Brodie, of Rowington, the writer thus offers a few notes on some detached teeth and spines as yet unknown or incompletely described. The same collection has on former occasions yielded new Ganoids*, and

* *Dictyopyge superstes*, Egerton, Quart. Journ. Geol. Soc. vol. xiv. p. 164, pl. xi. figs. 1-3 (*Palæoniscus*); and *Semionotus Brodiei*, E. T. Newton, *ibid.* vol. xliii. p. 539, pl. xxii. figs. 1-8.